TUBULAR BUILDING SYSTEMS

STRUCTURAL DESIGN

ENCLOSED BUILDING EXPOSURE B

MAXIMUM 30'-0" WIDE X 20'-0" EAVE HEIGHT- BOX EAVE FRAME AND BOW FRAME

29 July 2021
Revision 6
M&A Project No. 16022S/17300S/20352S

Prepared for:

Tubular Building Systems, LLC
631 SE Industrial Circle
Lake City, Florida 32025

Prepared by:

Moore and Associates Engineering and Consulting, Inc.
1009 East Avenue
North Augusta, SC 29841

401 S. Main Street, Suite 200
Mount Airy, NC 27030

Wayne S Moore
Digitally signed by Wayne S Moore
Date: 2022.09.12 15:03:17 -04'00'

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING

WAYNE S. MOORE
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No 57170
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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DRAWN BY: JG	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B PE SEAL COVER SHEET			
CHECKED BY: PDH				
PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S	
CLIENT: TBS	SHT. 1	DWG. NO: SK-3	REV: 6	

DRAWING INDEX

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PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S
CLIENT: TBS	SHT. 2	DWG. NO: SK-3	REV.: 6

INSTALLATION NOTES AND SPECIFICATIONS

1 DESIGN IS FOR A MAXIMUM 30'-0" WIDE x 20'-0" EAVE HEIGHT ENCLOSED STRUCTURES

2 DESIGN WAS DONE IN ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE (FBC) 7TH EDITION, 2012 INTERNATIONAL BUILDING CODE (IBC), 2015 IBC AND 2018 IBC

3 DESIGN LOADS ARE AS FOLLOWS:
A) DEAD LOAD = 15 PSF
B) LIVE LOAD = 12 PSF
C) GROUND SNOW LOAD = 10 PSF

4 LOW ULTIMATE WIND SPEED 105 TO 140 MPH (NOMINAL WIND SPEED 81 TO 108 MPH): MAXIMUM RAFTER/POST AND END POST SPACING = 5.0 FEET

5 HIGH ULTIMATE WIND SPEED 141 TO 170 MPH (NOMINAL WIND SPEED 109 TO 132 MPH): MAXIMUM RAFTER/POST AND END POST SPACING = 4.0 FEET

6 END WALL COLUMNS (POSTS) AND SIDE WALL COLUMNS ARE EQUIVALENT IN SIZE AND SPACING (UNLESS NOTED OTHERWISE)

7 RISK CATEGORY I

8 WIND EXPOSURE CATEGORY B

9 SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2" x 2 1/2" - 14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS FOR VERTICAL PANELS 29 GAUGE METAL PANELS SHALL BE FASTENED TO 18 GAUGE HAT CHANNELS (UNLESS OTHERWISE NOTED)

10 AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR PURLINS AND POSTS: INTERIOR = 9" OR END = 6" (MAX.)

11 FASTENERS CONSIST OF #12-14x3/4" SELF-DRILLING FASTENER (SDF), USE CONTROL SEAL WASHER WITH EXTERIOR FASTENERS. SPECIFICATIONS APPLICABLE ONLY FOR MEAN ROOF HEIGHT OF 20 FEET OR LESS, AND ROOF SLOPES OF 14° (3:12 PITCH) OR LESS. SPACING REQUIREMENTS FOR OTHER ROOF HEIGHTS AND/OR SLOPES MAY VARY. ROOF SLOPES LESS THAN 3:12 REQUIRE USE OF JOINT SEALANT

12 STANDARD ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6" OF EACH COLUMN

13 STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/WELDED NUT x 30" LONG IN SUITABLE SOIL CONDITIONS MAY BE USED FOR LOW (≤ 139 MPH NOMINAL) WIND SPEEDS ONLY. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED. COORDINATE WITH LOCAL CODES/ORDINANCES REGARDING MINIMUM LENGTH FOR FROST DEPTH PROTECTION.

14 WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:
SOIL SITE CLASS = D
RISK CATEGORY I
R= 3.25 I_E= 1.0
S_{DS}= 1.522 g $V = C_s W$
S_{D1}= 0.839 g

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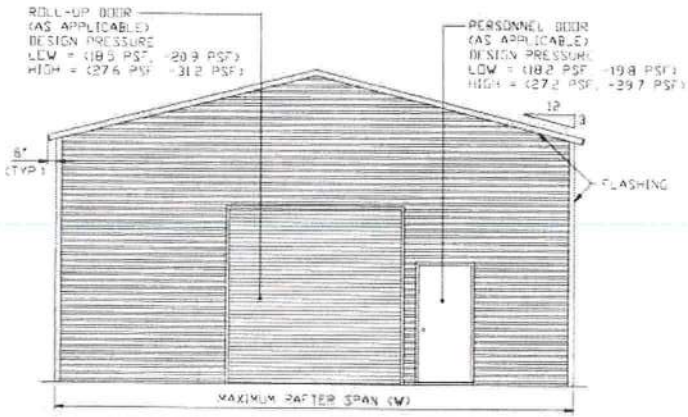
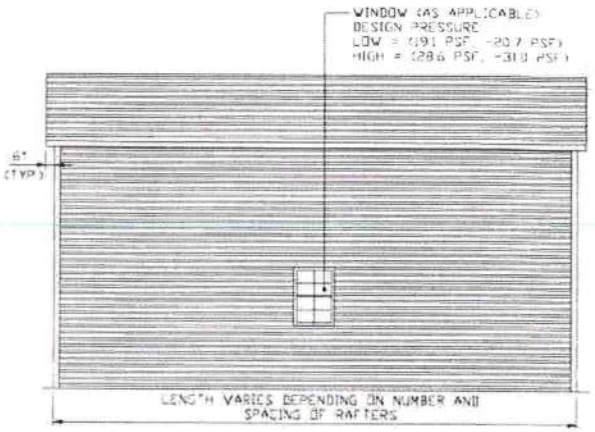
CLIENT: TBS	SHT. 3	DWG. NO: SK-3	REV.: 6

BOX EAVE FRAME RAFTER ENCLOSED BUILDING

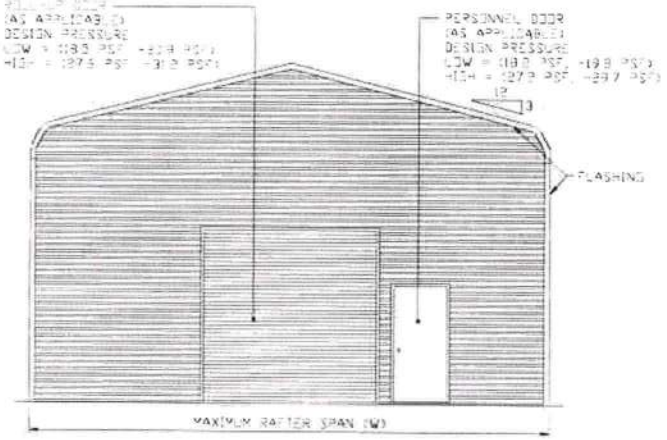


TYPICAL END ELEVATION
SCALE: NTS

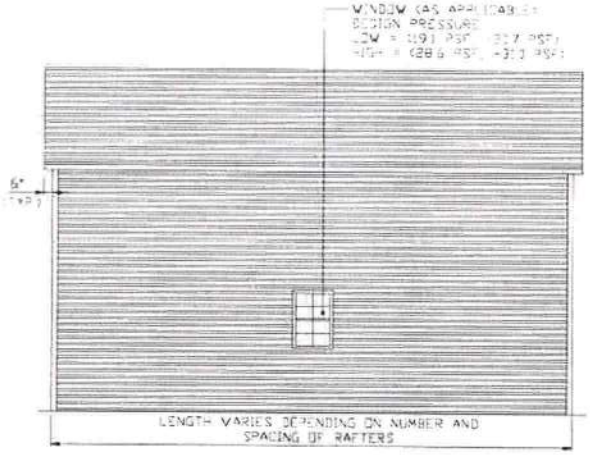


TYPICAL SIDE ELEVATION
SCALE: NTS

BOW FRAME RAFTER ENCLOSED BUILDING



TYPICAL END ELEVATION
SCALE: NTS



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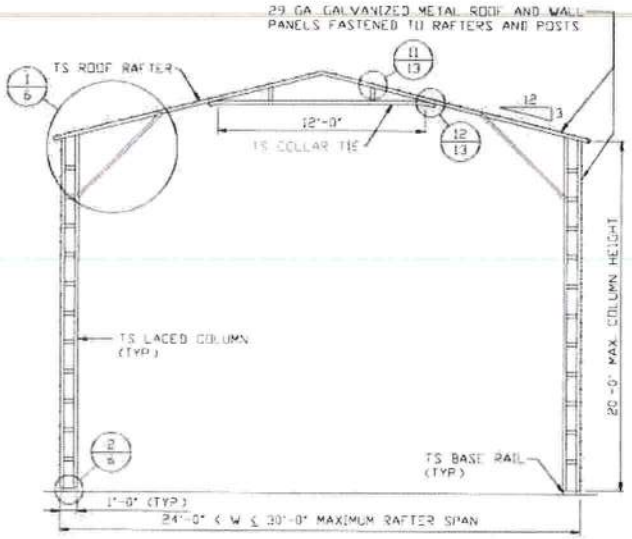
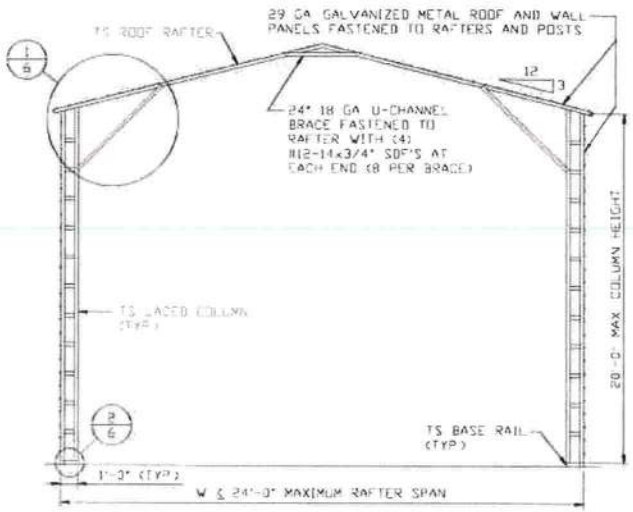


TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION

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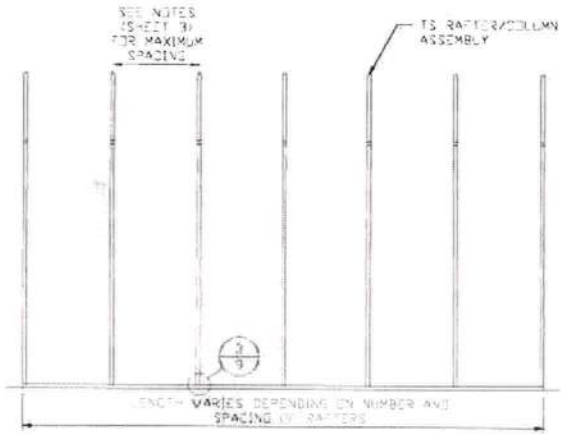

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

SCALE: NTS

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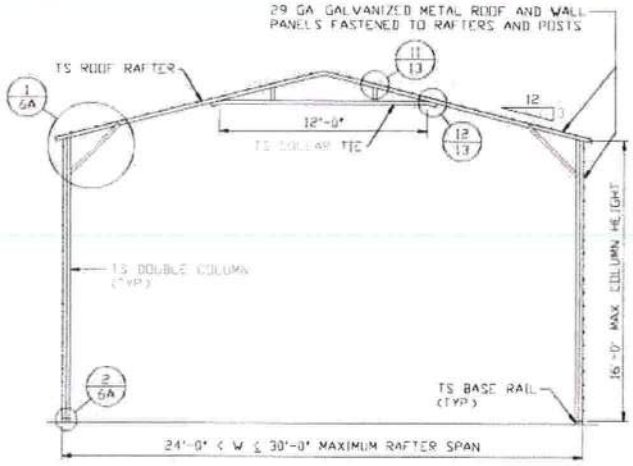

TYPICAL RAFTER/COLUMN END FRAME SECTION

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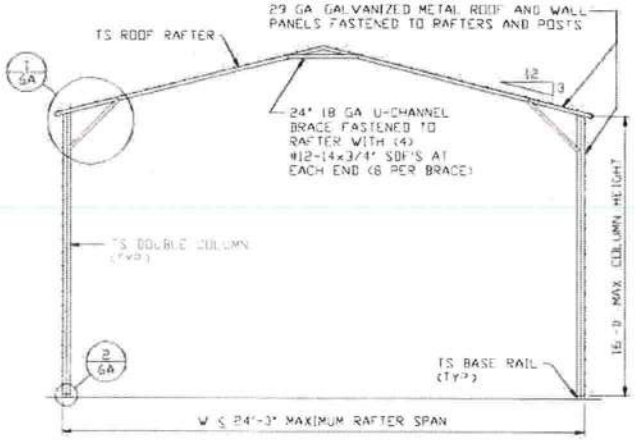

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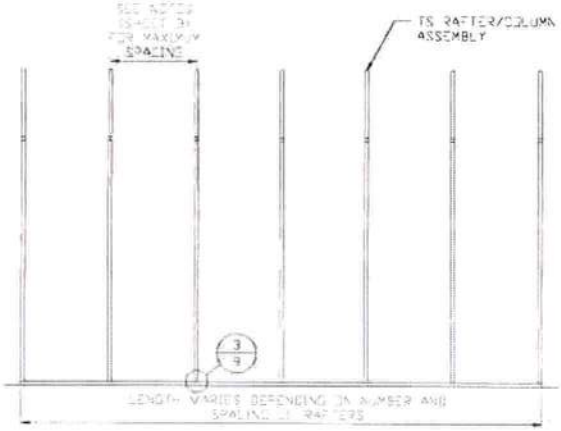

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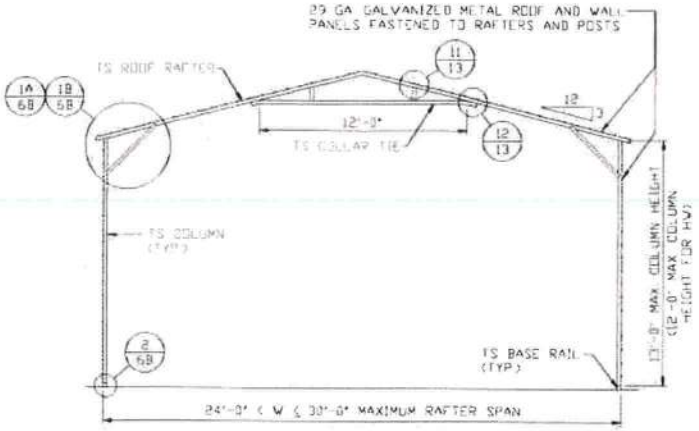

TYPICAL RAFTER/COLUMN END FRAME SECTION

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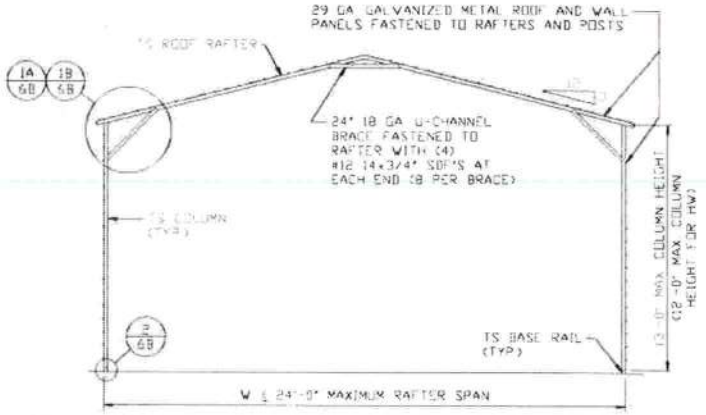

TYPICAL RAFTER/COLUMN END FRAME SECTION

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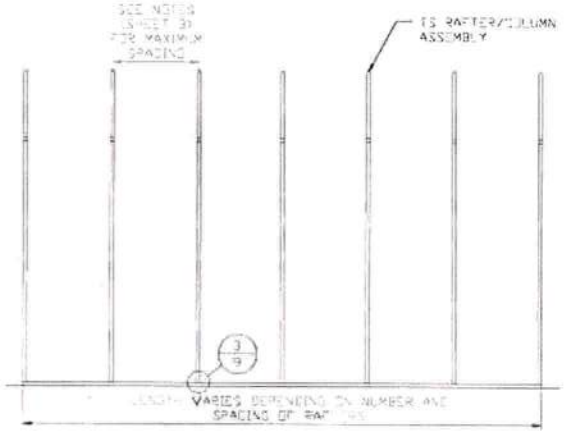

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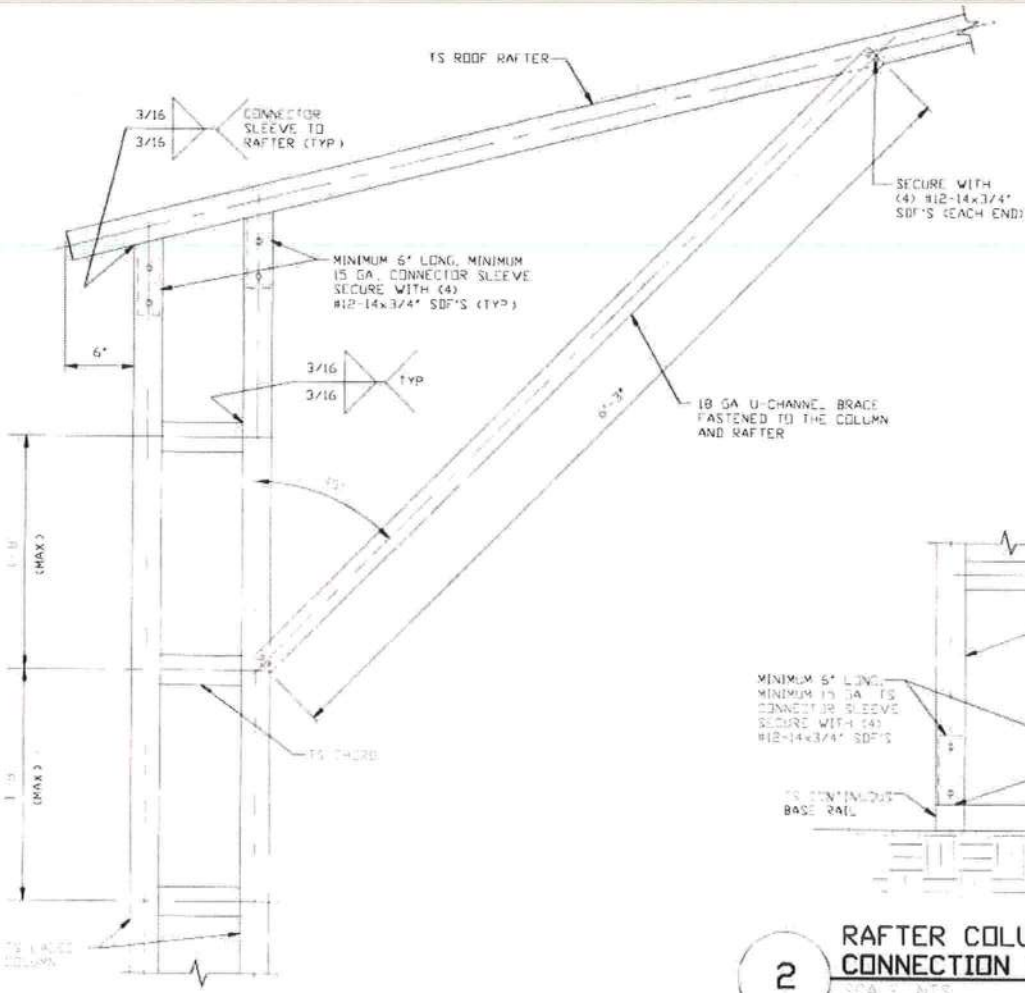
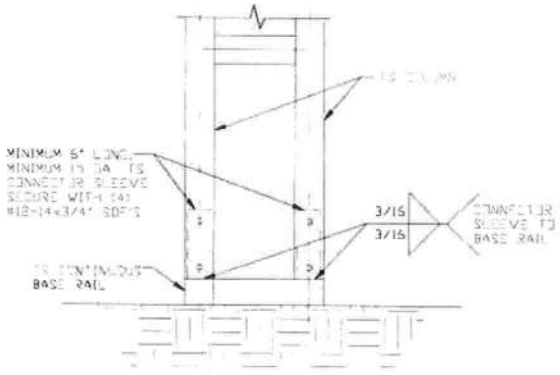


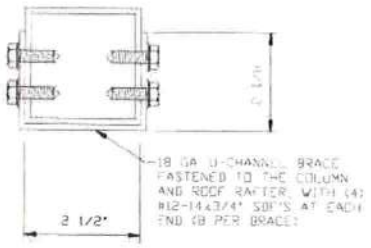
1 BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 16'-0" < TO ≤ 20'-0"

SCALE: NTS



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

SCALE: NTS



BRACE SECTION

SCALE: NTS

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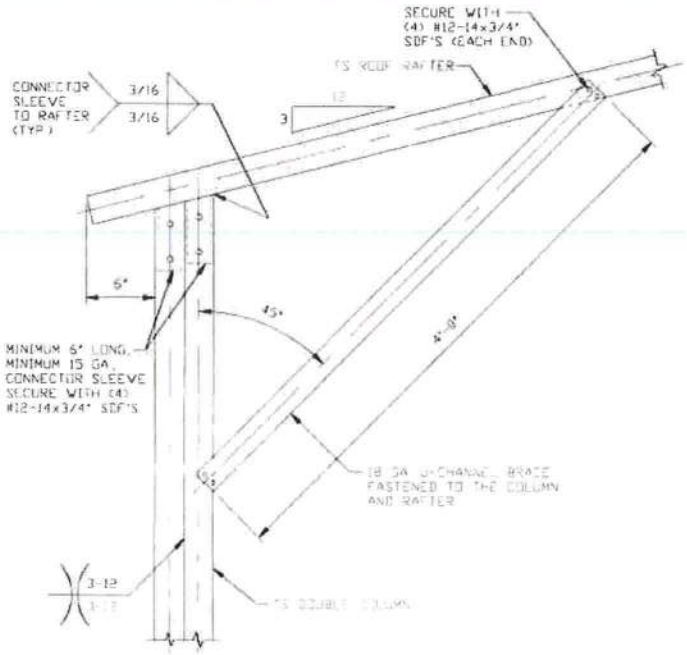
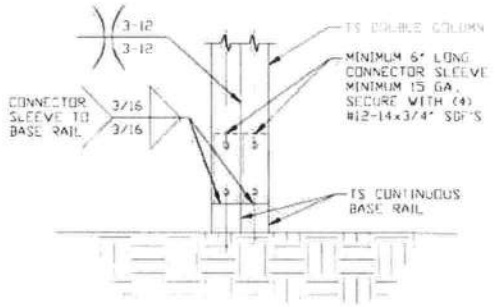


1 BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < TO ≤ 16'-0"

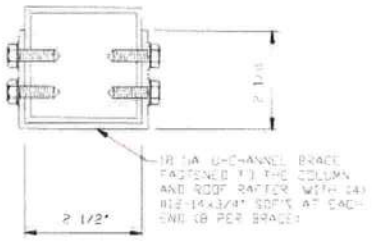
SCALE: NTS

NOTE: COLUMN HEIGHTS 12'-0" < TO ≤ 15'-0" FOR HIGH WIND



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

SCALE: NTS



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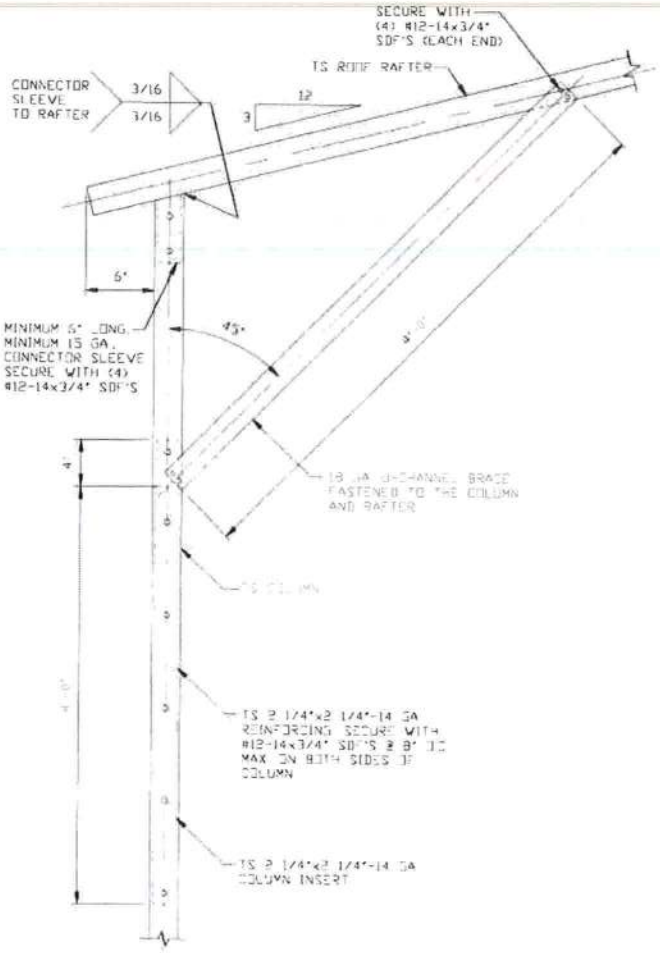
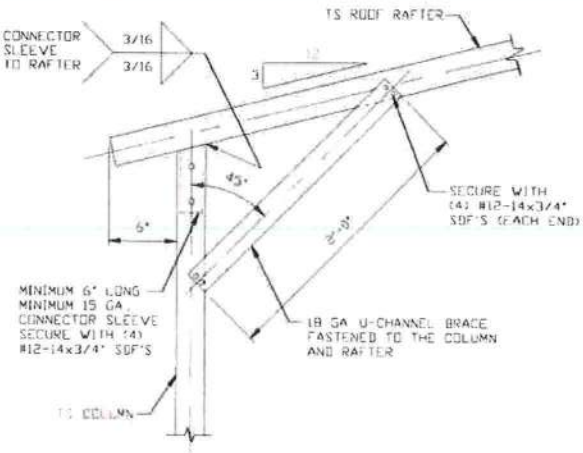


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 13'-0"

1A

SCALE: NTS

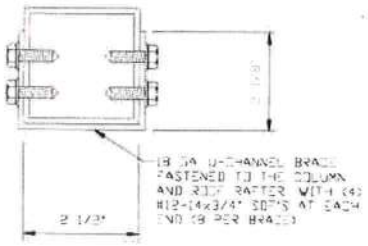
NOTE: MAXIMUM COLUMN HEIGHT IS 13'-0" FOR HIGH WIND



BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0"

1B

SCALE: NTS



BRACE SECTION

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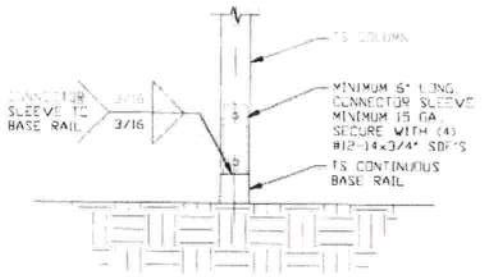

RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

2

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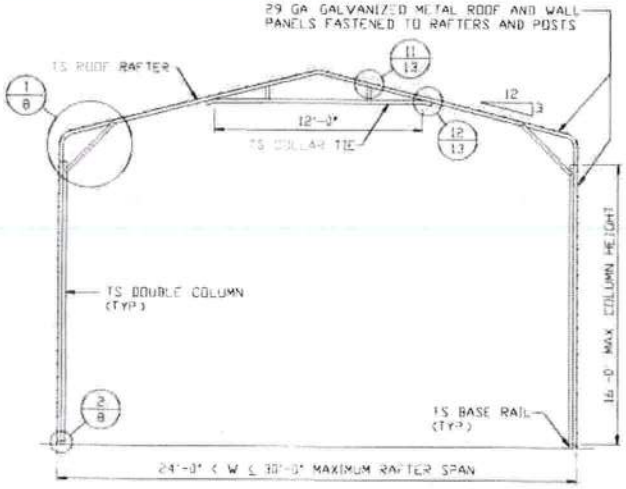

TYPICAL RAFTER/COLUMN END FRAME SECTION

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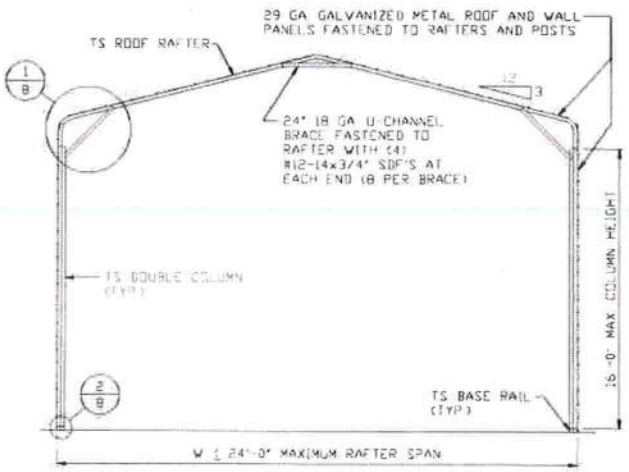

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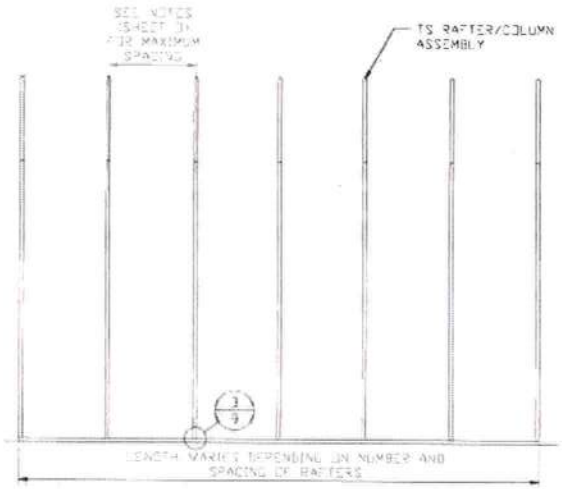

TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

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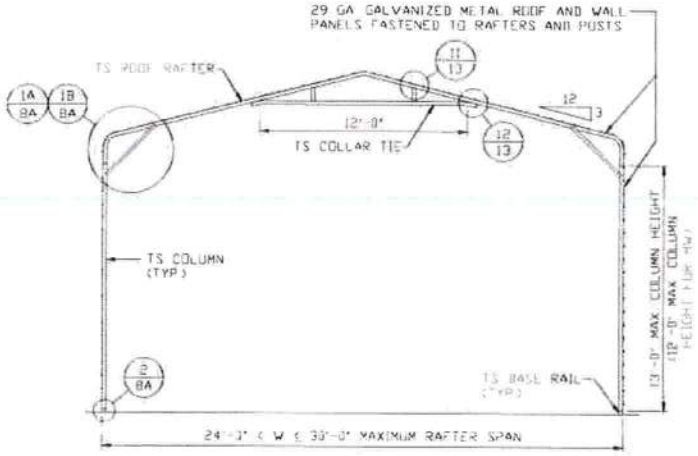

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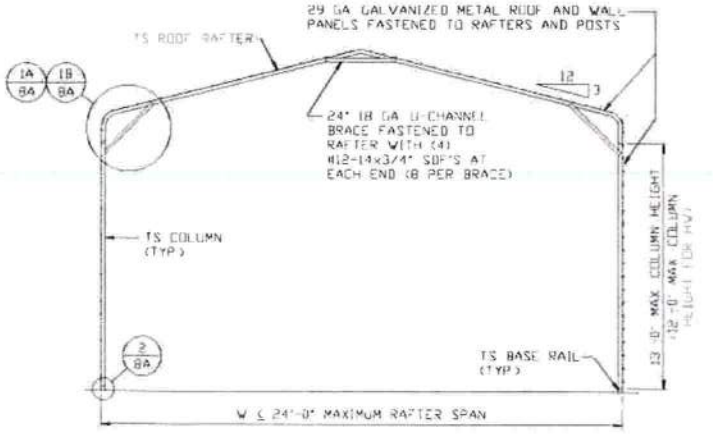

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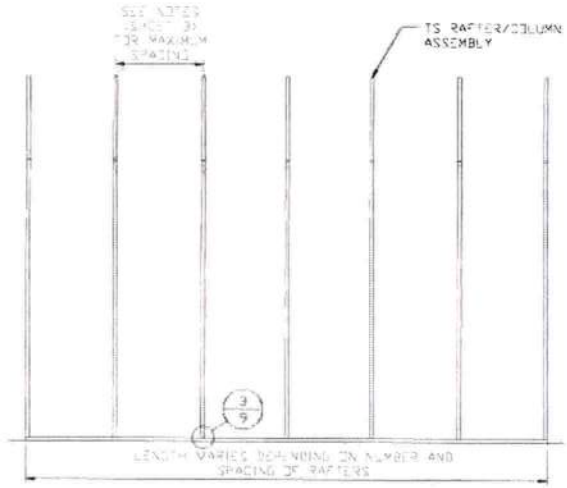

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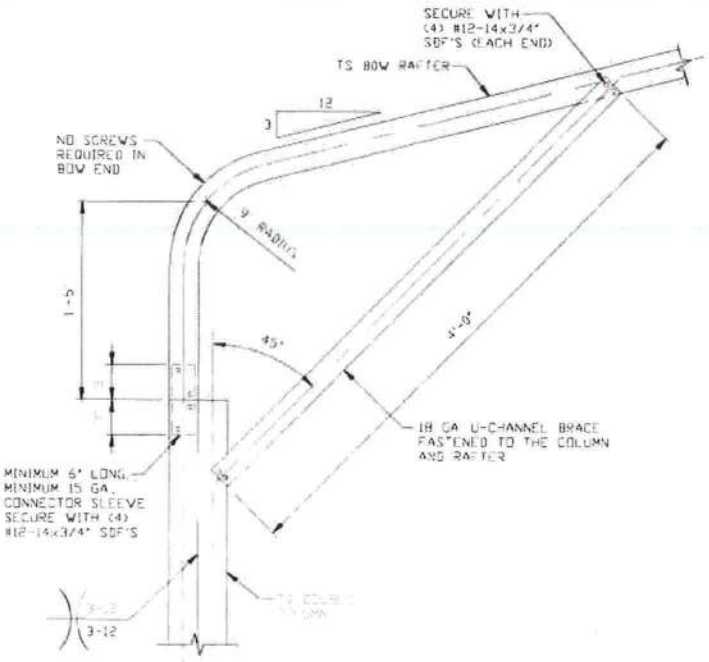
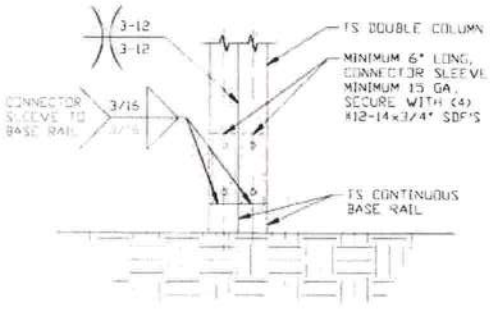
	CLIENT: TBS	SHT. 7A	DWG. NO: SK-3 / REV: 6



1 BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 13'-0" < TO ≤ 16'-0"

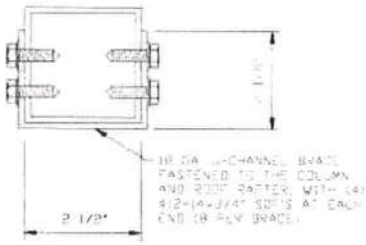
SCALE: NTS

NOTE: COLUMN HEIGHTS 13'-0" < TO ≤ 16'-0" FOR HIGH WIND



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

SCALE: NTS



BRACE SECTION

SCALE: NTS

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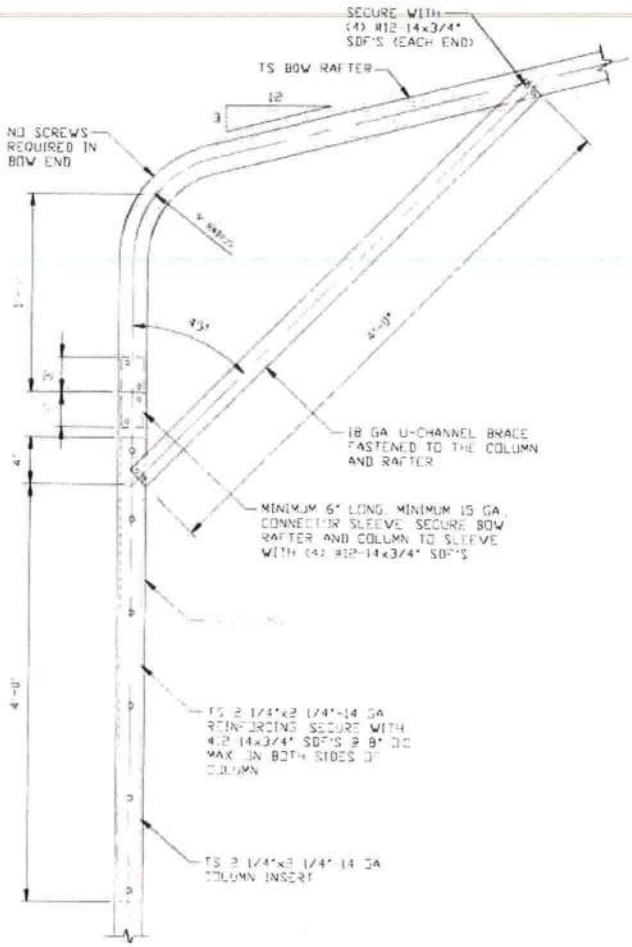
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S
	CLIENT: TBS	SHT. 8	DWG. NO: SK-3	REV.: 6

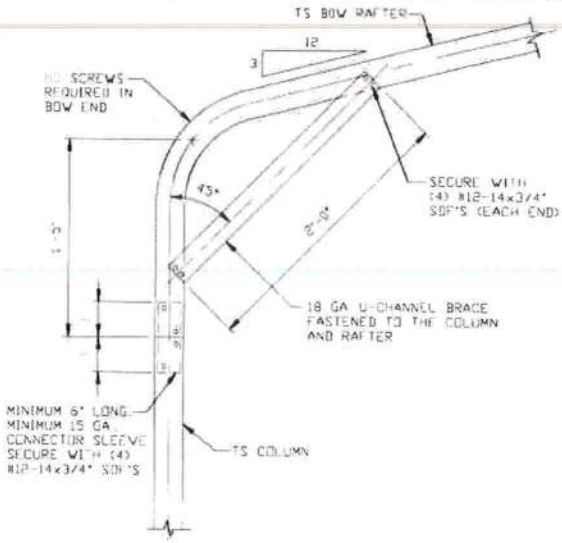


BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 13'-0"

1A

SCALE: NTS

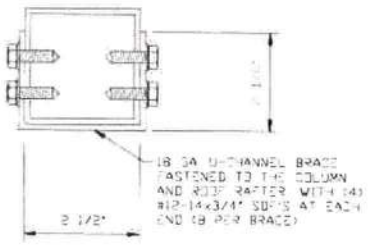
NOTE: MAXIMUM COLUMN HEIGHT IS 12'-0" FOR HIGH WIND



BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0"

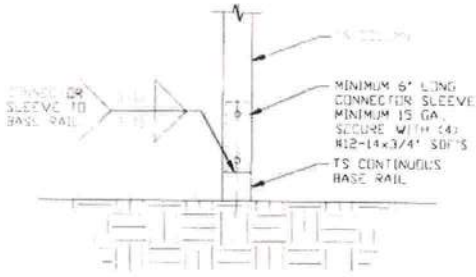
1B

SCALE: NTS



BRACE SECTION

SCALE: NTS



RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

2

SCALE: NTS

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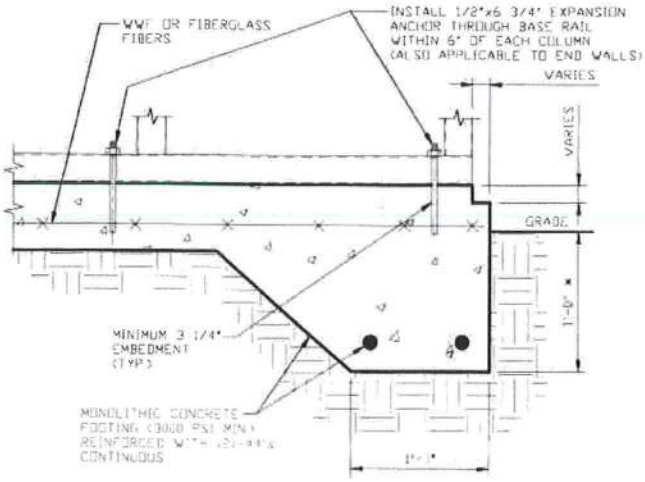
CLIENT: TBS	SHT. 8A	DWG. NO: SK-3	REV.: 6	

BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED

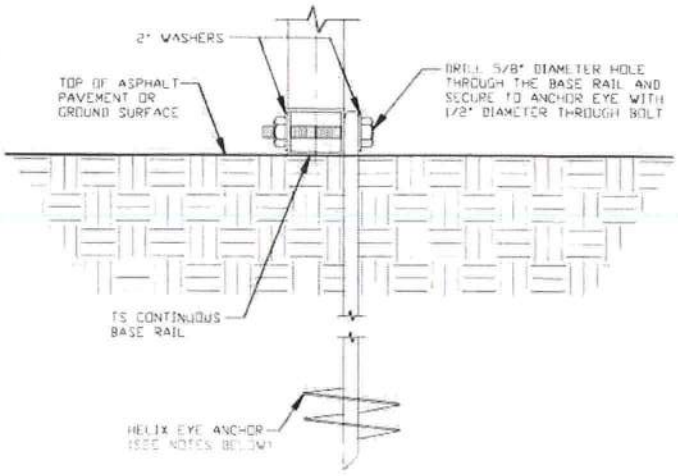


3A CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS

MINIMUM ANCHOR EDGE DISTANCE IS 4"

* COORDINATE WITH LOCAL CODES/ORD REGARDING MINIMUM FROST DEPTH REQ



3B GROUND BASE HELIX ANCHORAGE

SCALE: NTS

(CAN BE USED FOR ASPHALT)

* COORDINATE WITH LOCAL CODES/ORD REGARDING MINIMUM FROST DEPTH REQ

GENERAL NOTES

NOTE: CONCRETE MONOLITHIC SLAB DESIGN ON MINIMUM SOIL BEARING CAPACITY OF 1500 PSF

CONCRETE:

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS

COVER OVER REINFORCING STEEL:

FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318
3 INCHES IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2 INCHES ELSEWHERE

REINFORCING STEEL:

THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT

REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED:

1. REINFORCEMENT IS BENT COLD
2. THE DIAMETER OF THE BEND MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS
3. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT

HELIX ANCHOR NOTES:

1. FOR VERY DENSE AND/OR CEMENTED SANDS COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT
2. FOR CORAL USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT
3. FOR MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS, AND CLAYS USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT
4. FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS ALLUVIAL FILL USE MINIMUM (2) 6" HELICES WITH MINIMUM 50 INCH EMBEDMENT
5. FOR VERY LOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS, ALLUVIAL FILL USE MINIMUM (2) 8" HELICES WITH MINIMUM 60 INCH EMBEDMENT

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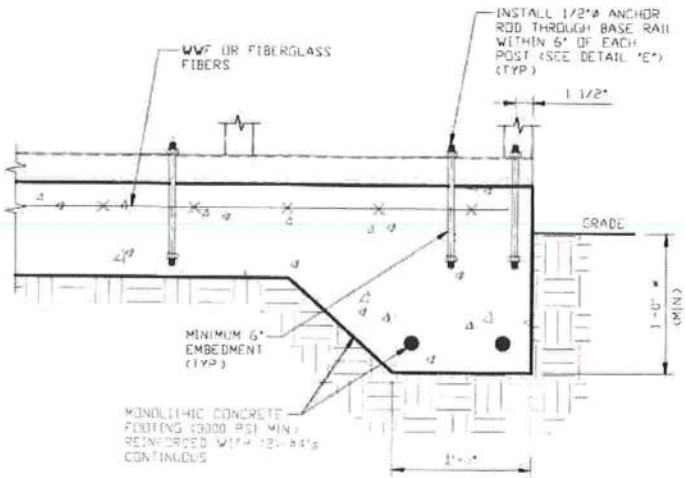
OPTIONAL FOUNDATION ANCHORAGE FOR LOW AND HIGH WIND SPEED

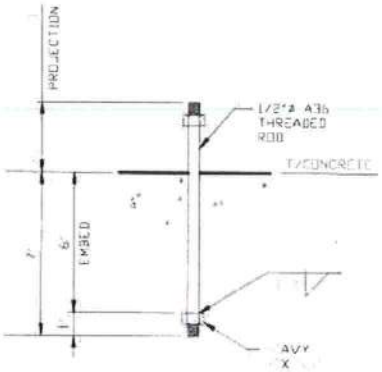


3C CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

SCALE: NTS

MINIMUM ANCHOR EDGE DISTANCE IS 1 1/2"

* COORDINATE WITH LOCAL CODES/ORD REGARDING MINIMUM FROST DEPTH REQ



3D ANCHOR ROD THROUGH BASE RAIL DETAIL

SCALE: NTS

GENERAL NOTES

NOTE: CONCRETE MONOLITHIC SLAB DESIGN ON MINIMUM SOIL BEARING CAPACITY OF 1,500 PSF

CONCRETE:

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS

COVER OVER REINFORCING STEEL:

FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318

3 INCHES IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2 INCHES ELSEWHERE

REINFORCING STEEL:

THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT

REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED:

1. REINFORCEMENT IS BENT COLD
2. THE DIAMETER OF THE BEND MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS
3. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT

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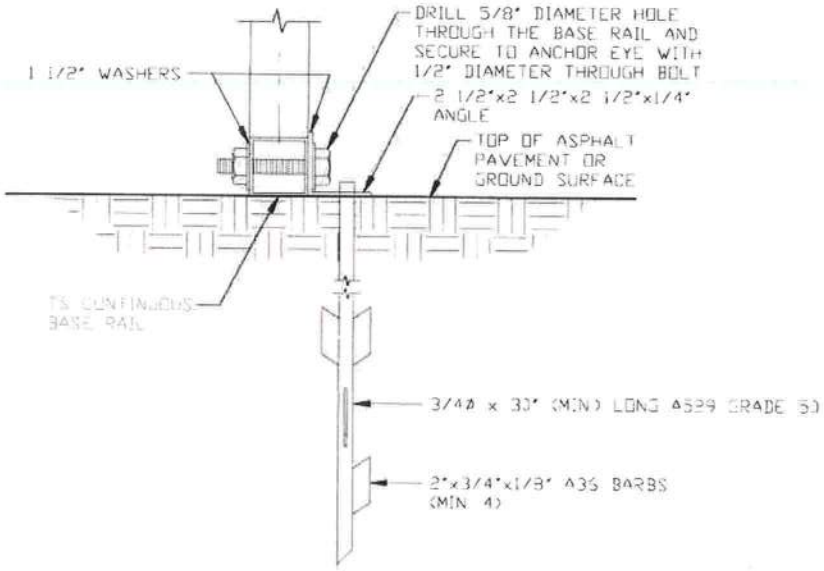
BASE RAIL ANCHORAGE OPTION



3E **ASPHALT BASE ANCHORAGE (HP 9 BARBED DRIVE ANCHOR)**

SCALE: NTS
(CAN BE USED FOR ASPHALT)
* COORDINATE WITH LOCAL CODES/ORD REGARDING MINIMUM FROST DEPTH REQ

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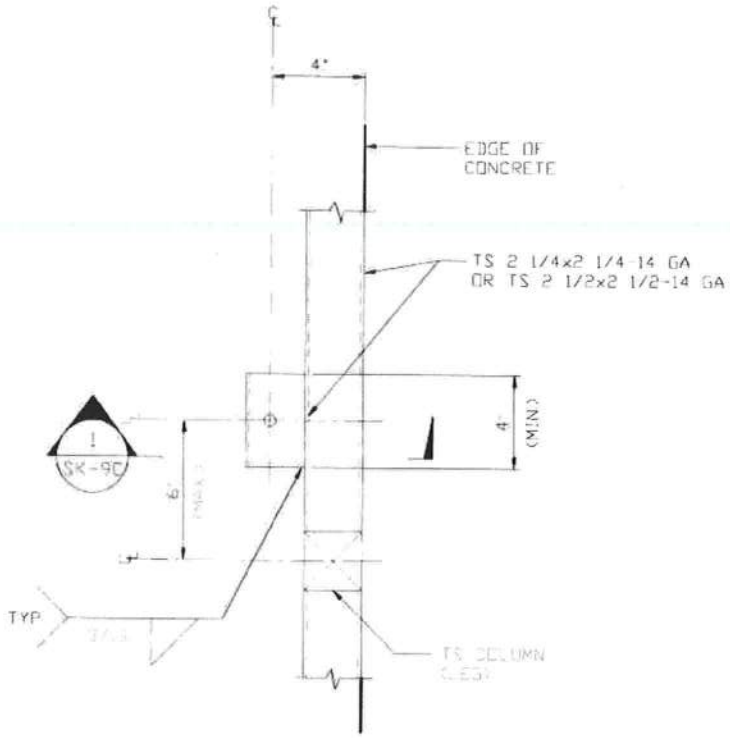
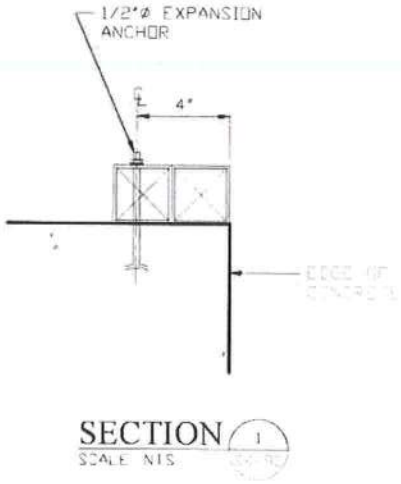
	CLIENT: TBS	SHT. 9B	DWG. NO: SK-3	REV: 6

BASE RAIL ANCHORAGE OPTIONS



TYPICAL ANCHOR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE

SCALE: NTS



SECTION 1

SCALE: NTS

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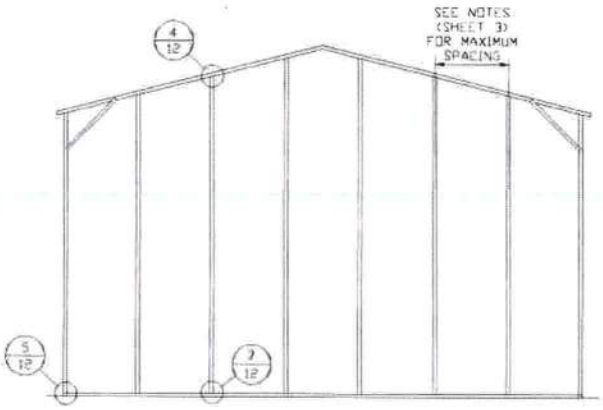
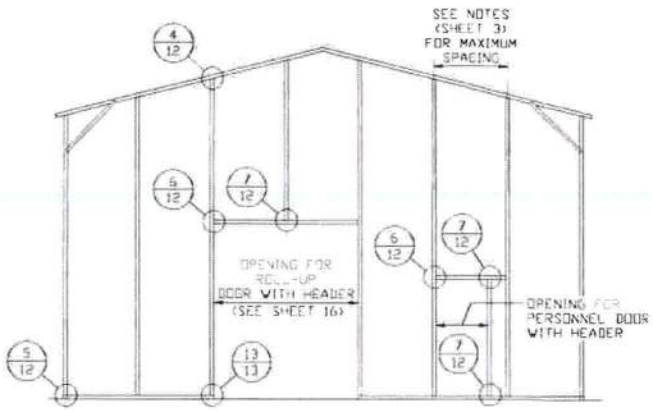
	CLIENT: TBS	SHT. 9C	DWG. NO: SK-3	REV.: 6

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



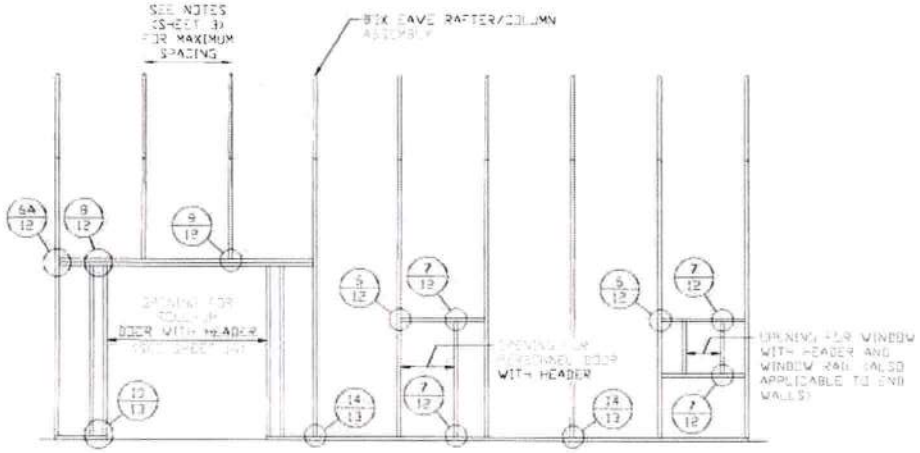
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

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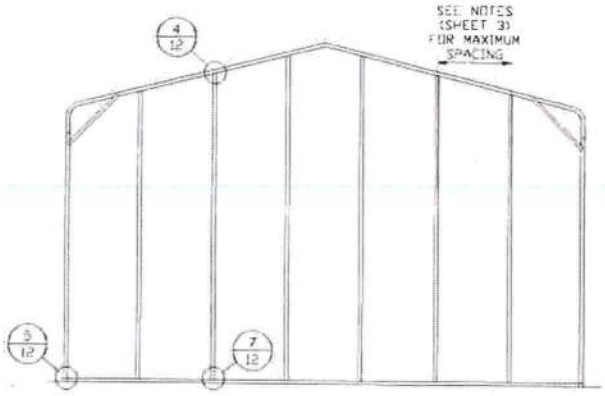
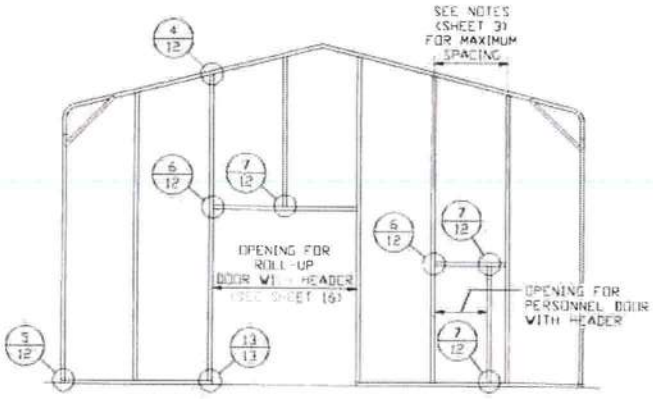
	CLIENT: TBS	SHT. 10	DWG. NO: SK-3	REV.: 6

BOW RAFTER END WALL AND SIDE WALL OPENINGS



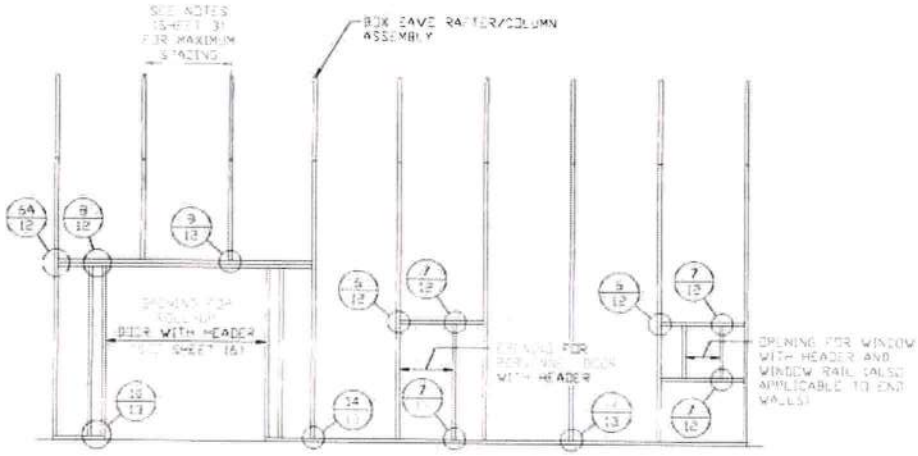
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

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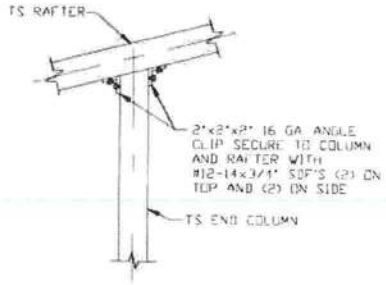
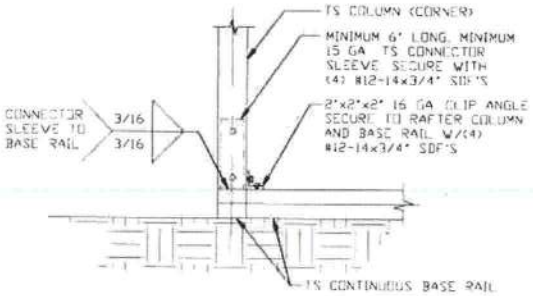
	CLIENT: TBS	SHT. 11	DWG. NO: SK-3	REV.: 6

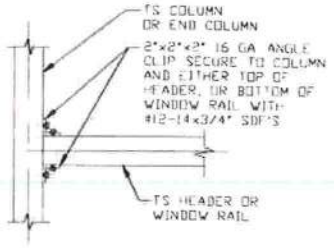
CONNECTION DETAILS



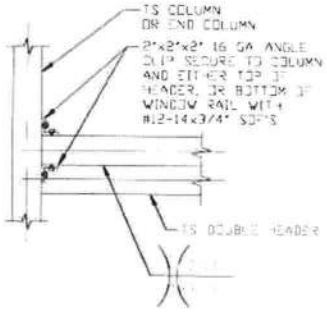
4 END COLUMN/RAFTER CONNECTION DETAIL
SCALE: NTS



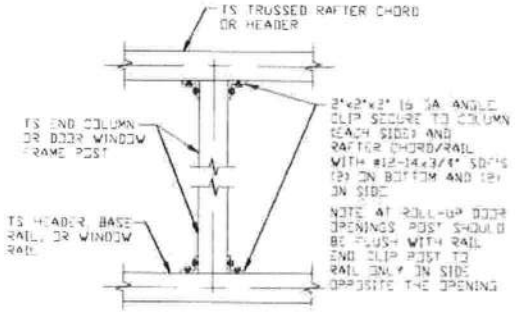
5 END COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



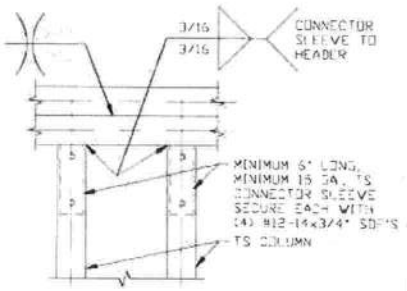
6 HEADER OR WINDOW RAIL TO COLUMN CONNECTION DETAIL
SCALE: NTS



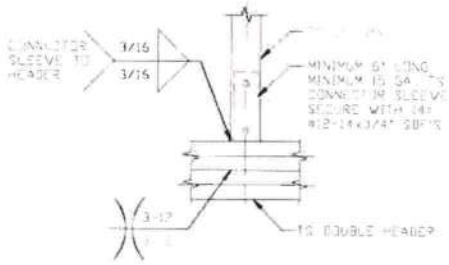
6A DOUBLE HEADER TO COLUMN CONNECTION DETAIL
SCALE: NTS



7 COLUMN TO HEADER, BASE RAIL, OR WINDOW RAIL CONNECTION DETAIL
SCALE: NTS



8 DOUBLE HEADER/COLUMN CONNECTION DETAIL
SCALE: NTS



9 COLUMN/DOUBLE HEADER CONNECTION DETAIL
SCALE: NTS

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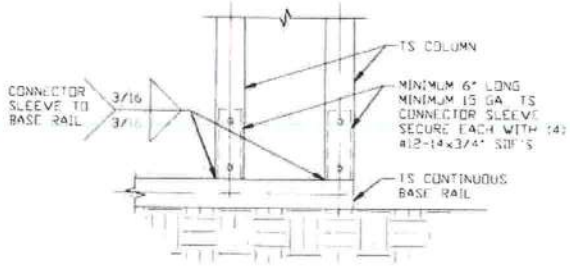
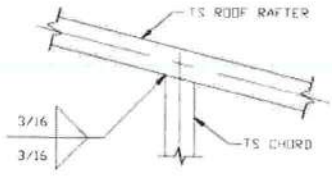
CLIENT: TBS	SHT. 12	DWG. NO: SK-3	REV: 6

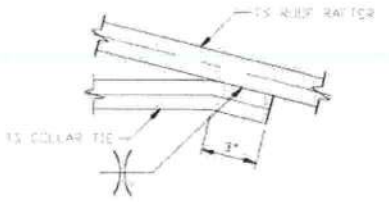
CONNECTION DETAILS



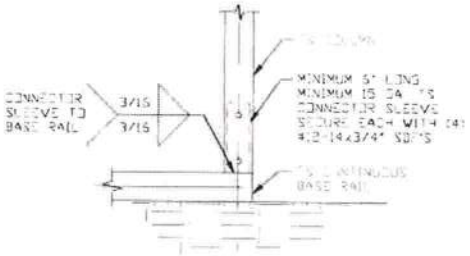
10 COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



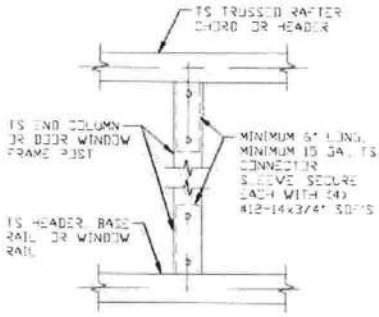
11 RAFTER TO CHORD CONNECTION DETAIL
SCALE: NTS



12 COLLAR TIE CONNECTION DETAIL
SCALE: NTS



13 COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



14 COLUMN TO HEADER, BASE RAIL CONNECTION DETAIL
SCALE: NTS

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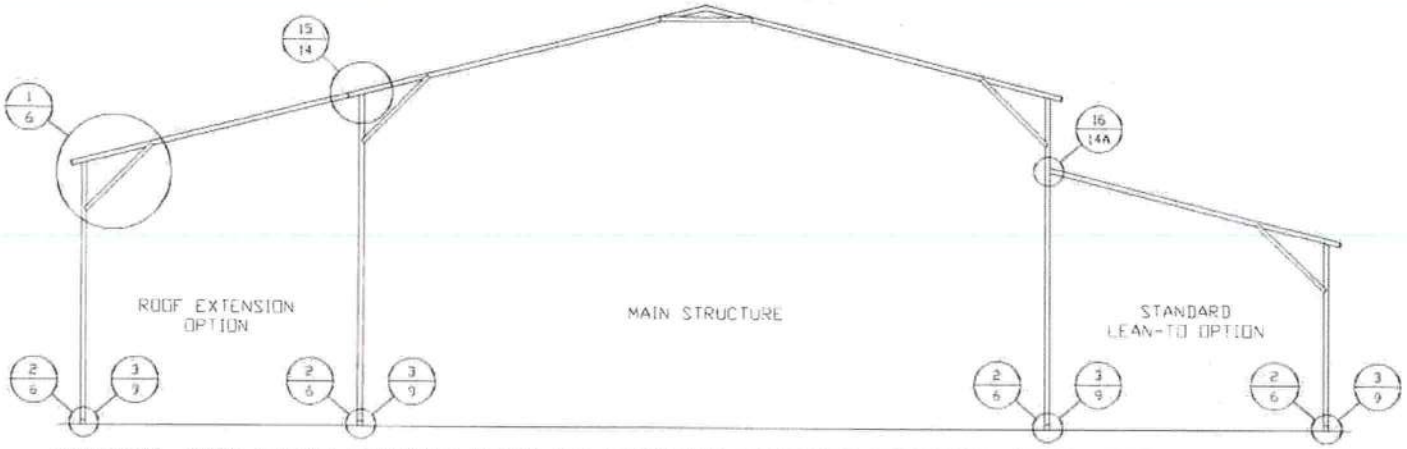
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S
	CLIENT: TBS	SHT. 13	DWG. NO: SK-3	REV.: 6

BOX EAVE RAFTER LEAN-TO OPTIONS



TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

SCALE: NTS

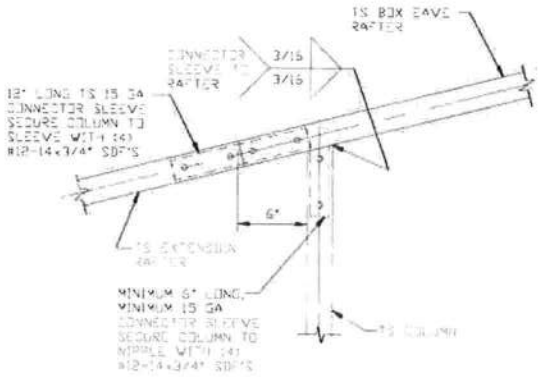
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE LACED COLUMNS FOR EAVE HEIGHTS 16'-0" < TO ≤ 20'-0"

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 13'-0" (12'-0" FOR HIGH WIND) < TO ≤ 16'-0"

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS 13'-0" < TO ≤ 13'-0" (12'-0" FOR HIGH WIND) (WITH 4'-4" INSERT)

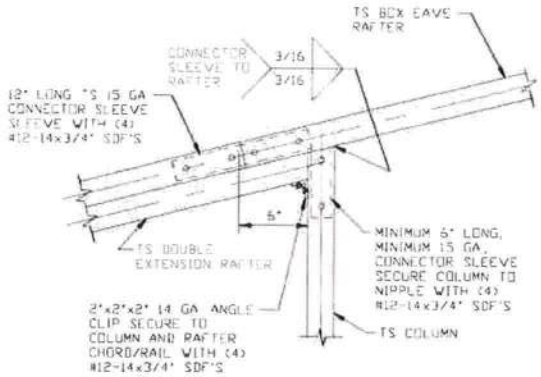
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS ≤ 13'-0"

KNEE BRACES MUST BE 4'-0" (5'-0" FOR HIGH WIND) WHEN LEAN-TO'S ARE ADDED.



15 SIDE EXTENSION RAFTER/COLUMN DETAIL FOR RAFTER SPANS ≤ 15'-0"

SCALE: NTS



15A SIDE EXTENSION RAFTER/COLUMN DETAIL FOR RAFTER SPANS 15'-0" < TO ≤ 24'-0"

SCALE: NTS

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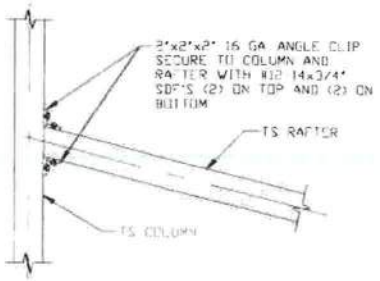
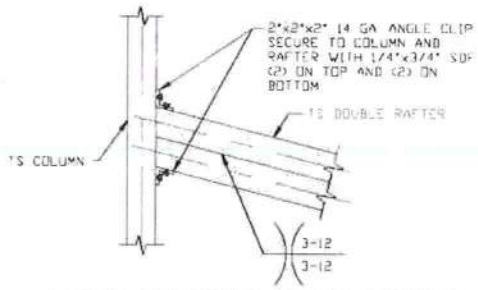
CHECKED BY: PDH			
PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S
CLIENT: TBS	SHT. 14	DWG. NO: SK-3	REV.: 6

BOX EAVE RAFTER LEAN-TO OPTIONS



16 LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 15'-0"

SCALE: NTS



16A LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 15'-0" < TO ≤ 24'-0"

SCALE: NTS

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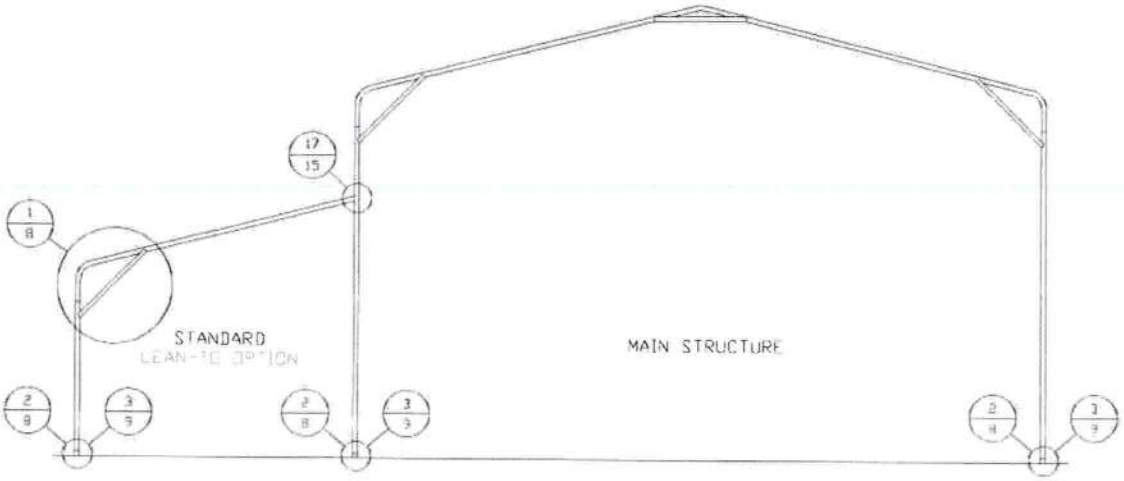
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S
	CLIENT: TBS	SHT. 14A	DWG. NO: SK-3	REV.: 6

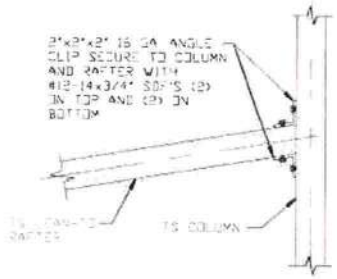
BOW RAFTER LEAN-TO OPTIONS



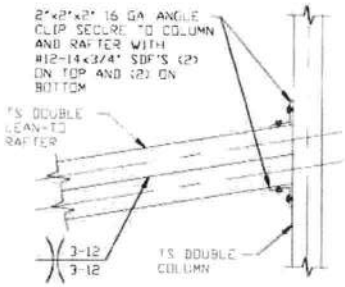
TYPICAL BOW RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

SCALE NTS

MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE DOUBLE COLUMNS FOR EAVE HEIGHTS 13'-0" (12'-0" FOR HIGH WIND) < TO ≤ 15'-0"
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS 13'-0" < TO ≤ 13'-0" (12'-0" FOR HIGH WIND) (WITH 4'-4" INSERT)
MAIN BUILDING COLUMNS WITH LEAN-TO OR ROOF EXTENSION ATTACHED ARE REQUIRED TO BE SINGLE COLUMNS FOR EAVE HEIGHTS ≤ 10'-0"
KNEE BRACES MUST BE 4'-0" (5'-0" FOR HIGH WIND) WHEN LEAN-TO'S ARE ADDED



17 LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS ≤ 15'-0"
SCALE NTS



17A LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL FOR RAFTER SPANS 15'-0" < TO ≤ 24'-0"
SCALE: NTS

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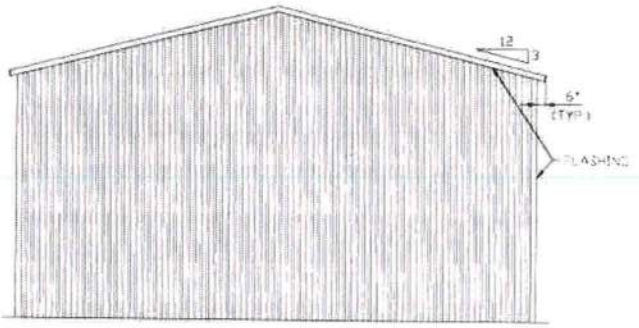
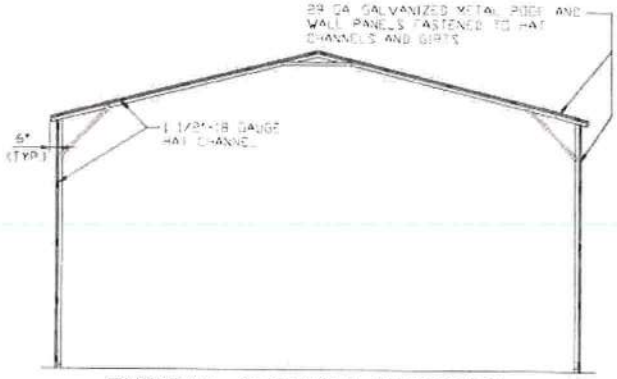
CHECKED BY: PDH				
PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S	
CLIENT: TBS	SHT. 15	DWG. NO: SK-3	REV.: 6	

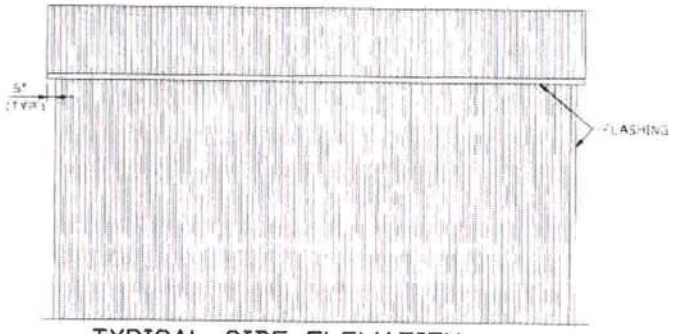
BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



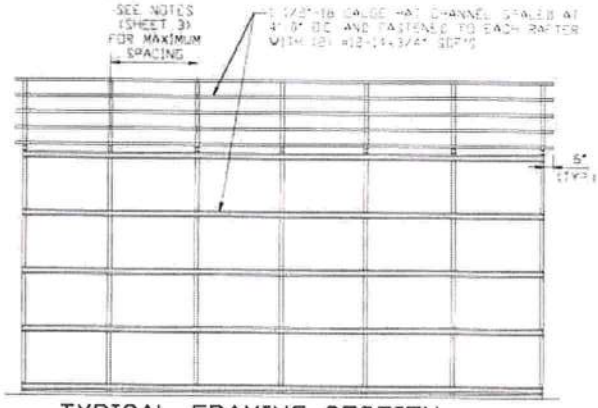
TYPICAL END ELEVATION
VERTICAL ROOF/SIDING OPTION
SCALE: NTS



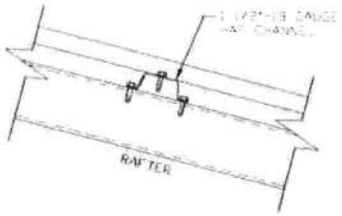
TYPICAL SECTION VERTICAL
ROOF/SIDING OPTION
SCALE: NTS



TYPICAL SIDE ELEVATION
VERTICAL ROOF/SIDING OPTION
SCALE: NTS



TYPICAL FRAMING SECTION
VERTICAL ROOF/SIDING OPTION
SCALE: NTS
NOTE: IS WALL GIRTS CAN BE USED AS AN OPTION IN PLACE OF HAT CHANNELS. IS GIRTS MUST BE SPACED AT 4'-0" (MAX.) OC



ROOF PANEL ATTACHMENT
(ALTERNATE FOR VERTICAL ROOF PANELS)
SCALE: NTS

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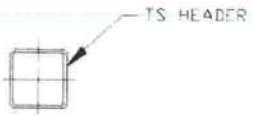
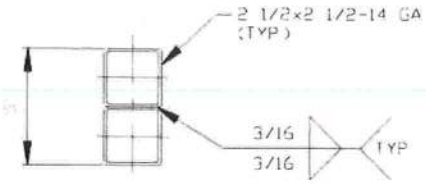
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S
	CLIENT: TBS	SHT. 16	DWG. NO: SK-3	REV.: 6

SIDE WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS ≤ 10'-0"

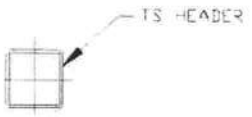
SCALE: NTS



HEADER DETAIL FOR DOOR OPENINGS 10'-0" < LENGTH ≤ 15'-0"

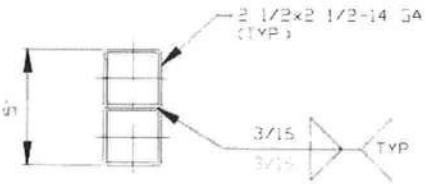
SCALE: NTS

END WALL HEADER OPTIONS



HEADER DETAIL FOR DOOR OPENINGS ≤ 12'-0"

SCALE: NTS



HEADER DETAIL FOR DOOR OPENINGS 12'-0" < LENGTH ≤ 15'-0"

SCALE: NTS

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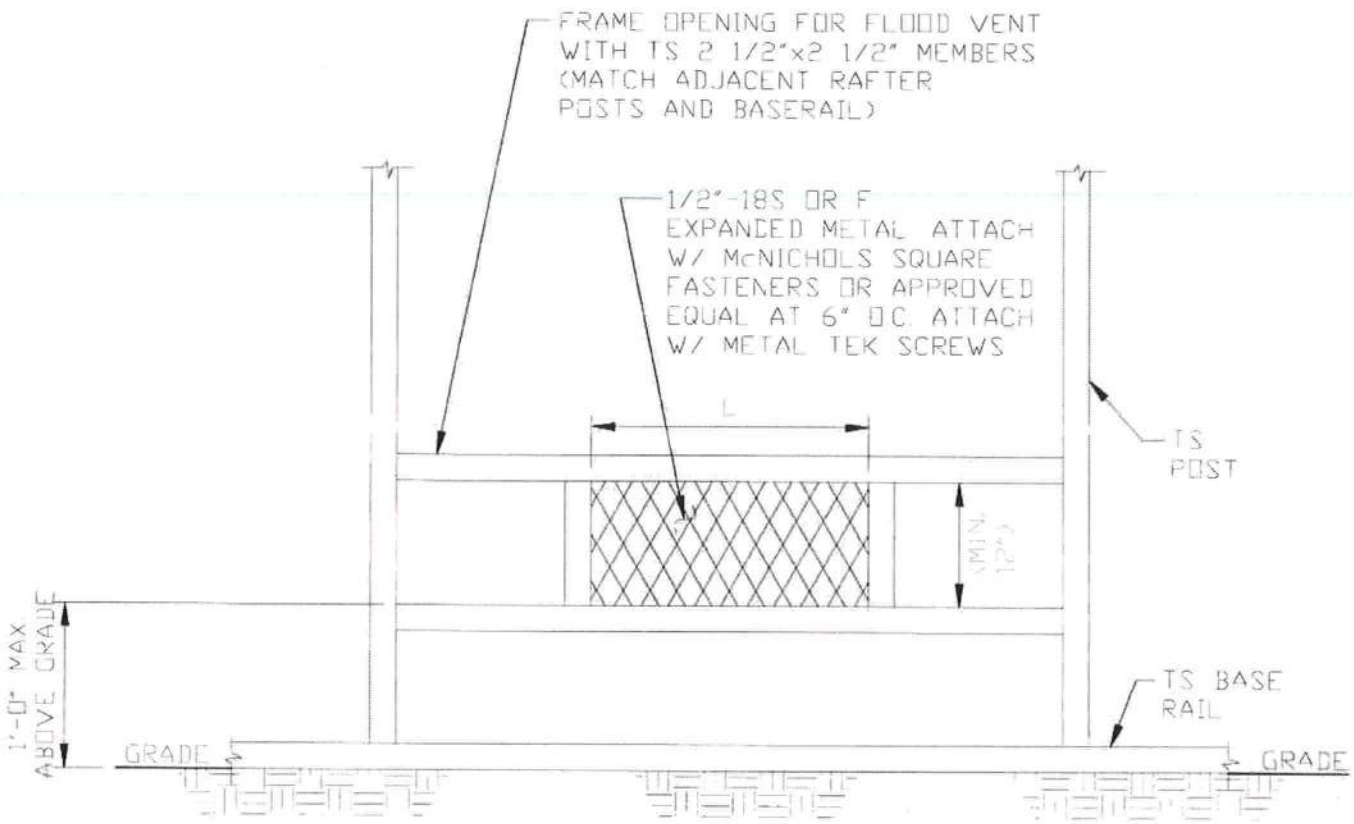
	CLIENT: TBS	SHT. 17	DWG. NO: SK-3	REV.: 6

FLOOD VENT DETAIL



TYPICAL FLOOD VENT DETAIL

SCALE N.T.S.

1. MINIMUM VENT SPACE REQUIRED = 1 SQ. INCH OF OPEN VENT AREA PER SQ. FOOT OF BUILDING AREA
2. THERE SHALL BE A MINIMUM OF TWO OPENINGS ON DIFFERENT SIDES FOR EACH ENCLOSED BUILDING
3. APPLY 1.3 FACTOR WHEN CALCULATING TOTAL OPEN AREA WHEN USING 1/2" 18GA S OR F EXPANDED METAL
4. TOTAL OPEN AREA OF VENT = LxHOMIN (12")
5. FLOOD VENT DETAIL COMPLIES WITH FEMA/NFIP
6. PREFABRICATED FLOOD VENTS MEETING THE REQUIREMENTS OF FEMA/NFIP MAY BE USED

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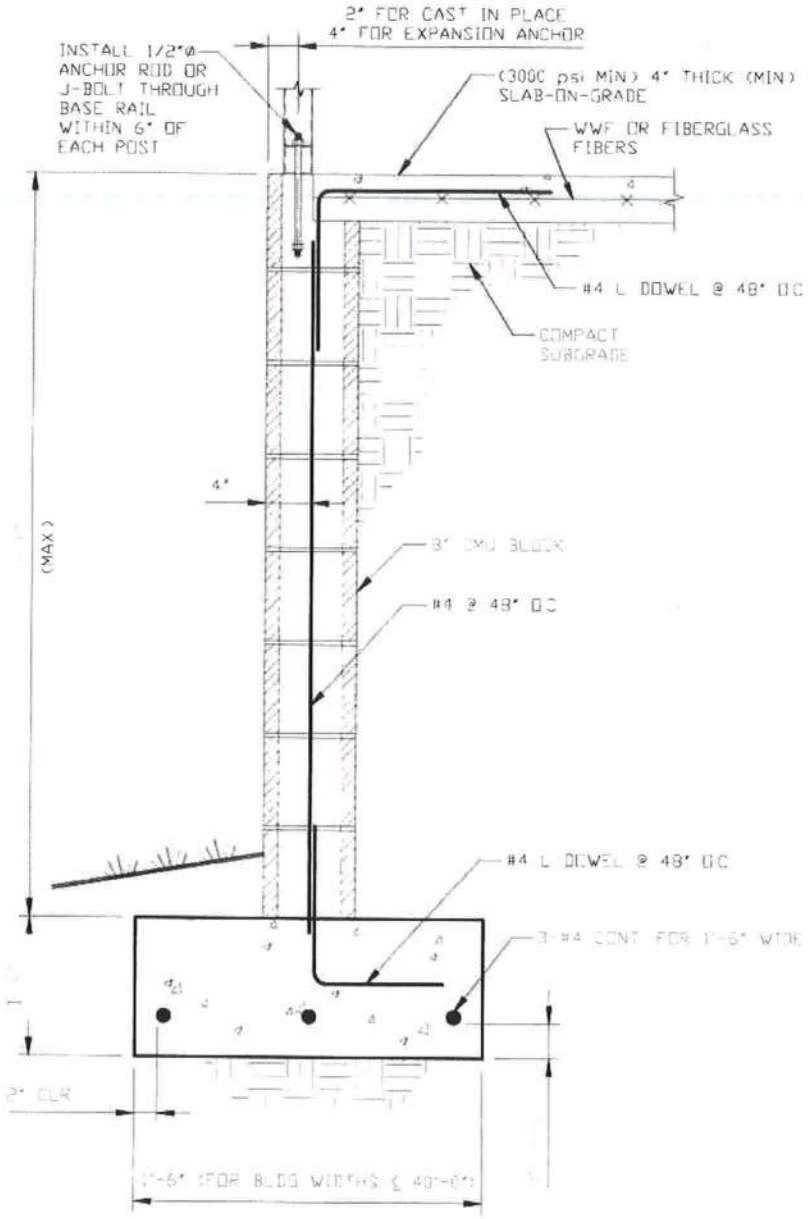
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 7-29-21	SCALE: NTS	JOB NO: 16022S/ 17300S/20352S
	CLIENT: TBS	SHT. 18	DWG. NO: SK-3	REV.: 6

STAND -ALONE STEM WALL DETAIL



STAND-ALONE CONCRETE MASONRY UNIT (CMU) FOUNDATION STEM WALL DETAIL

SCALE: NTS

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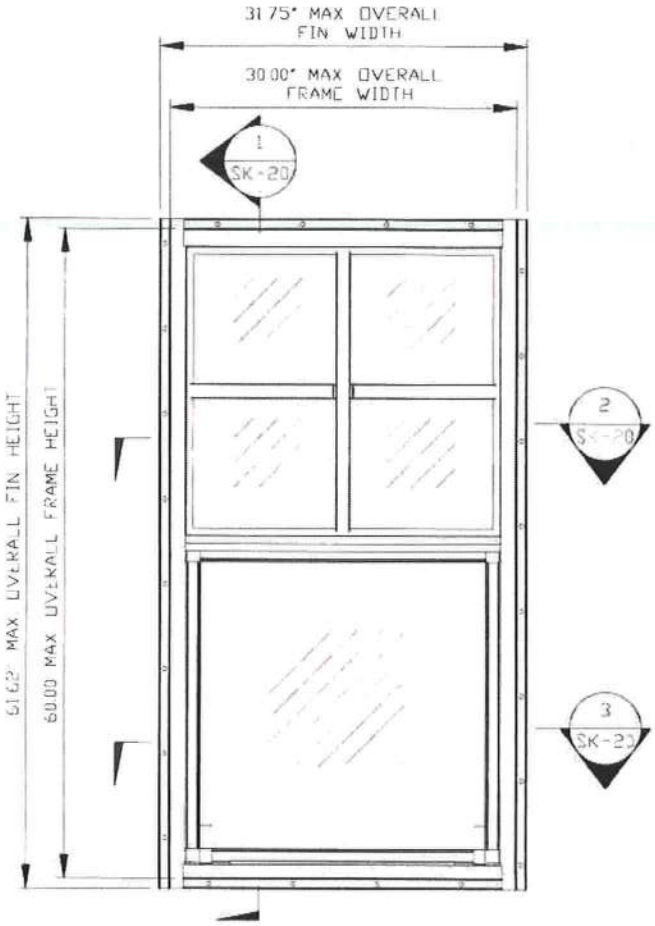
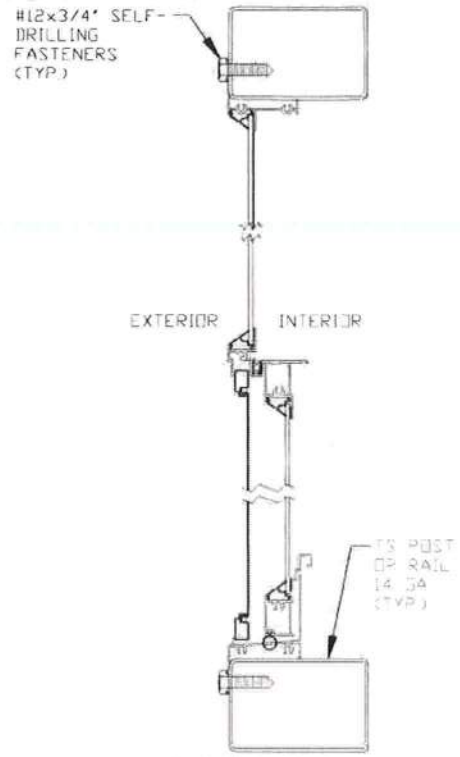
	CLIENT: TBS	SHT. 19	DWG. NO: SK-3	REV.: 6

VERTICAL SLIDING WINDOW DETAIL



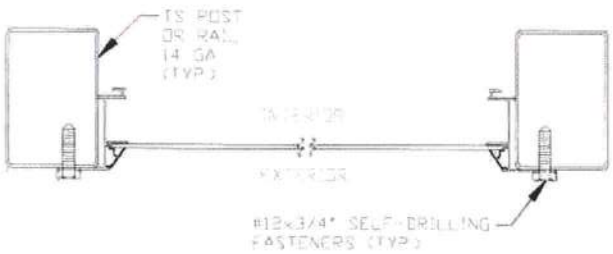
ELEVATION VIEW



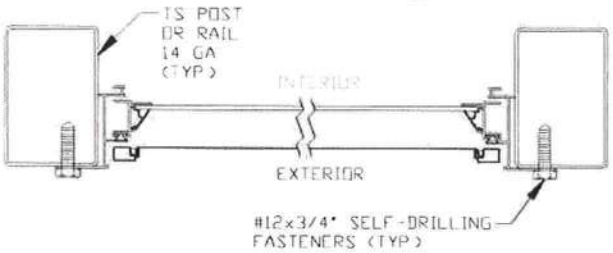
SECTION 1 SK-20
SCALE 3"=1'-0"

NOTE: KINRO SERIES 18000-R VS DR EQUIVALENT WINDOW IS REQUIRED

POSITIVE WALL PRESSURE: +40.0 PSF
NEGATIVE WALL PRESSURE: -40.0 PSF



SECTION 2 SK-20
SCALE 3"=1'-0"



SECTION 3 SK-20
SCALE: 3"=1'-0"

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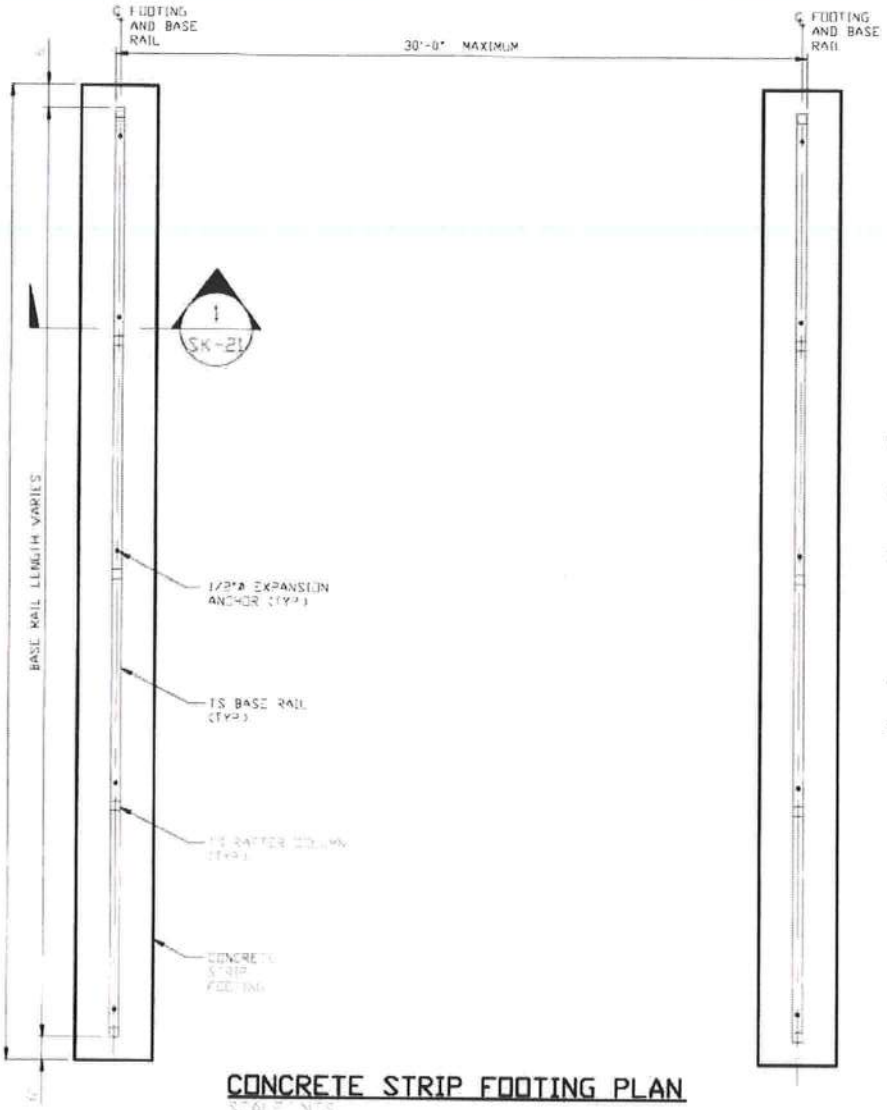
CLIENT: TBS	SHT. 20	DWG. NO: SK-3	REV.: 6

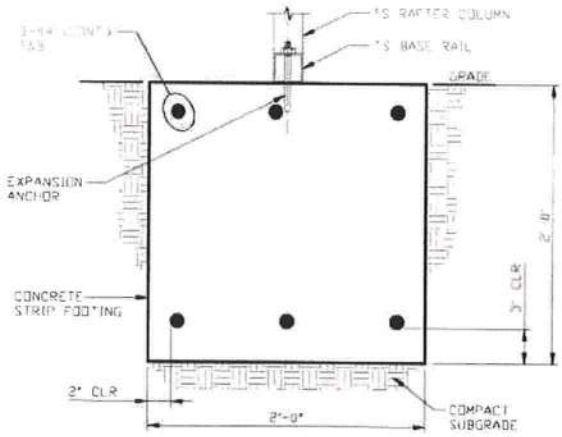
OPTIONAL CONCRETE STRIP FOOTING



CONCRETE STRIP FOOTING PLAN

SCALE: NTS

1. STRIP FOOTING DESIGN BASED ON MINIMUM SOIL BEARING CAPACITY OF 1,500 PSF
2. CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS
3. FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318. 3" IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2" ELSEWHERE
4. THE STRIP FOOTING REINFORCING STEEL SHALL BE ASTM A615 GRADE 60
5. REINFORCEMENT MAY BE BENT IN THE SHOP OR IN THE FIELD PROVIDED
   - A) REINFORCEMENT IS BENT COLD
   - B) THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS
   - C) REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT



SECTION 1/SK-21

SCALE: NTS

* COORDINATE WITH LOCAL CODES/ORD

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CLIENT: TBS	SHT. 21	DWG. NO: SK-3	REV.: 6

TUBULAR BUILDING SYSTEMS

Florida Product Approval Codes

Roll-Up Doors:

Janus International Corporation Model 3652: 14425.1 EXP 12/31/2023

Walk-In Door:

Elixir Door & Metal Company blank (no window): 17996.5 EXP 08/26/2025

Roof Deck:

Capital Metal Supply Inc. Ag Panel: 20147.2 EXP 03/04/2025

Wall Panel:

Capital Metal Supply Inc. Ag Panel: 20148.2 EXP 03/04/2025
Advanced Aluminum Dutch Lap Wall Panel: 31737.1 EXP 12/31/2023

If you have any questions on concern, please contact Donald Little at 386-961-0006 or at tubularbuildingsystems@gmail.com.